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Chapter 1. Product Overview

This chapter gives a complete physical description of your VT240P/PS, including all specifications and ratings.

1 General Information

VT240P

24 inch color TFL LCD display
Aluminum panel with heavy-duty steel chassis
Rear OSD control buttons
Water proof front panel with frame is NEMA 4 (IP65) compliant
Strengthened glass or resistive touch screen protects LCD panel from shock damage
Optional RS-232 or USB touch screen interface

VT240PS

24 inch color TFL LCD display
Aluminum panel with heavy-duty steel chassis
Rear OSD control buttons
Water proof stainless steel front panel with frame is NEMA 4X (IP66) compliant
Strengthened glass or resistive touch screen protects LCD panel from shock damage
Optional RS-232 or USB touch screen interface

2 Packing List

The VT240P/PS industrial LCD is shipped with the following parts and accessories:

Description	Qty
Power cord, three-prong	1
Mounting clips w/ screws	
AC 110-220V input to DC 12V output adaptor	1
Drivers & Utilities CD	1
VT240P/PS User Manual (this document)	1
6 feet RS-232 cable or USB interface cable for touch screen to computer	1

3 Specifications and ratings

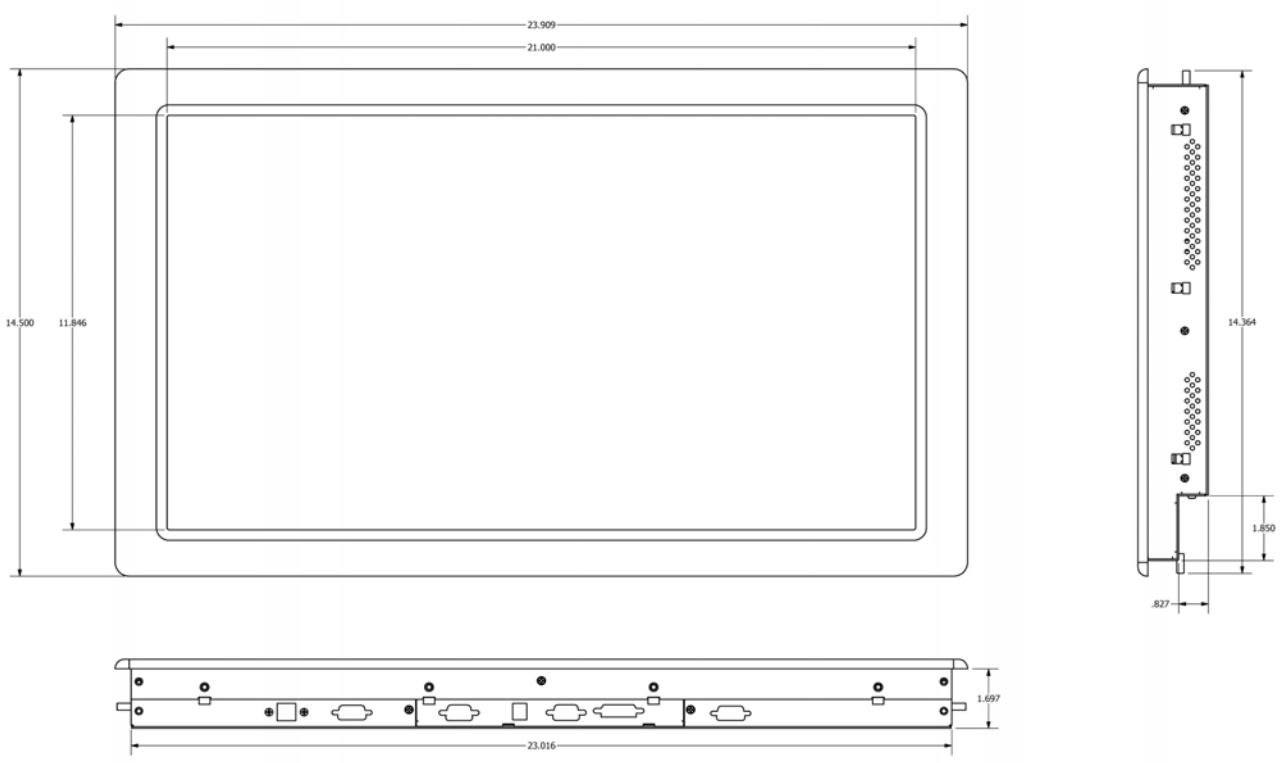
Model Number	VT240P/PS
Display Type	24-inch TFT
Resolution	1920 x 1080
Colors	16 Million
Dot Size (mm)	0.277 x 0.277
Luminance (nits)	300
Contrast	1000:1
Viewing Angle (LRUD)	170° V / 160° H
Front Bezel	Stainless Steal
NEMA Rating	VT240P – NEMA 4 (IP65), VT240PS – NEMA 4X (IP66)
Mounting	Panel mount
Display Control	Rear OSD Control Buttons
Operating temperature	0° to 50° C
Storage temperature	-20° to 60° C
Storage Humidity	5%to 95% non-condensing
Altitude	10,000ft (3000 meters)
Vibration	5Hz to 500Hz, 1G without rotating media
Shock	10G peak acceleration, 11 m sec without rotating media
Enclosure rating	NEMA 4 (IP65) compliant, when properly installed in a rated enclosure

Optional Touch screen

Type: 5-wire, resistive
Response Time: 16ms

Accuracy: ± 2.03 mm
Resolution: 4096 x 4096
Light transmission: Up to 78%
Lifetime: Over 35 million touches
MTBF: 490,000 hours
Operating pressure: Less than 4 ounces
Chemical Resistance: Tested with acetone, ethylene, isopropy1 alcohol and ammonia
Controller: RS-232 or USB interface
Scratch Resistance: 3H

4 Physical dimensions



5 Connectors

This section describes the components and connectors of your VT240P/PS industrial LCD.

Warning! Make sure your LCD is grounded at all times. Also make sure that it is on the same ground as any other equipment connected to its communications ports.

LCD Terminals

The figure below illustrates the LCD connectors' plate which contains power port, VGA port, DVI port and Touch screen interface port. There ports are described in further detail later.

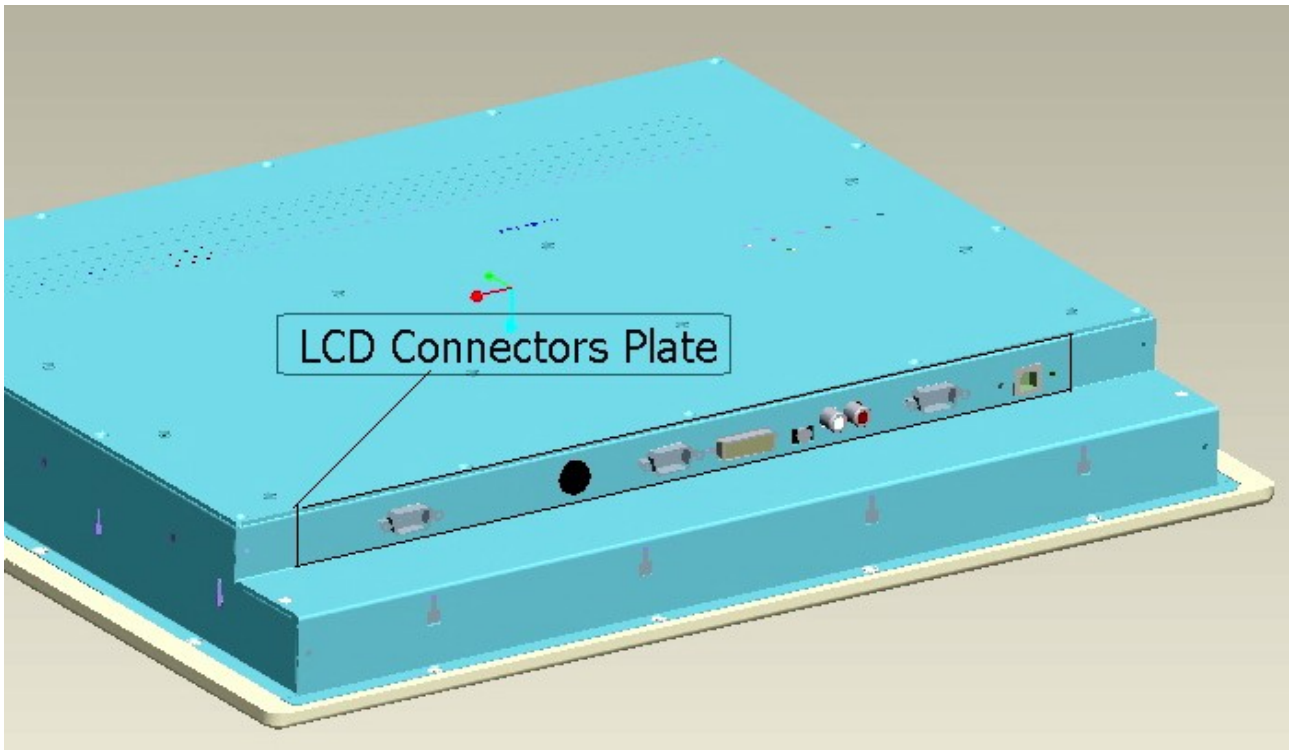


Figure 1.2 connectors located on the bottom of the chassis.

Terminals

The below figure illustrates some general terminals on the rear plate.

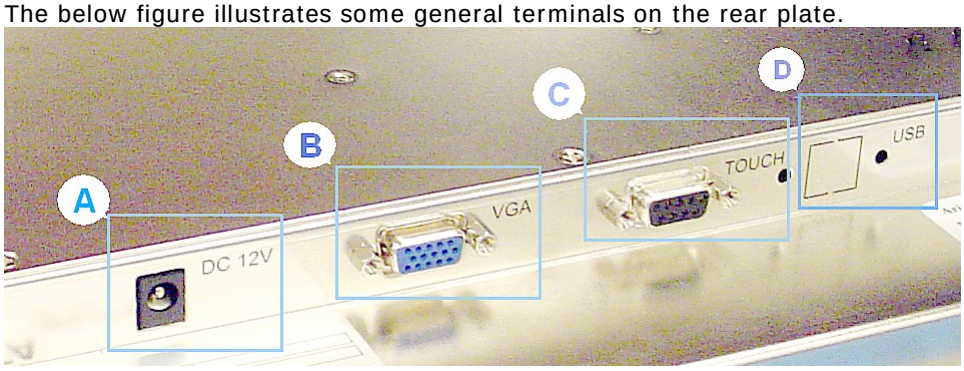


Figure 1.3 General terminals on the rear plate.

A: 12V DC Input

12V DC power input, connect AC/DC Adapter

B: VGA Input

Connect to VGA out port on your computer with 15 pin blue VGA cable.

C: RS-232 connector

Connect to RS-232 serial port on your computer for touch screen.

D: USB connector

Connect to USB port on your computer for Touch screen.

Chapter 2. Installation and setup

1 Mounting in a panel cutout

The VT240P/PS industrial LCD can be mounted in a prepared panel cutout, either on a rack or in a rated enclosure. To mount the unit in a panel, you must use the mounting clips that were packed with the unit. It is very important to locate the unit in a suitable environment. Make sure the place has good ventilation, is out of direct sunlight, away from sources of excessive dust, dirt, heat, water, moisture and vibration.

Warning! Failure to follow the instructions for your unit could result in injury to personnel or damage to equipment.

To mount the unit in a panel:
Make sure the unit is powered off and all external connections are removed.
Prepare a cutout of the appropriate size:

Module Number	VT240P/PS
Cutout WD x HD	23.01” x 13.60” (584.6mm x 345.6mm)

Position the unit in the cutout. Make sure the unit is held steady from the front before moving to the rear to continue the mounting procedure.

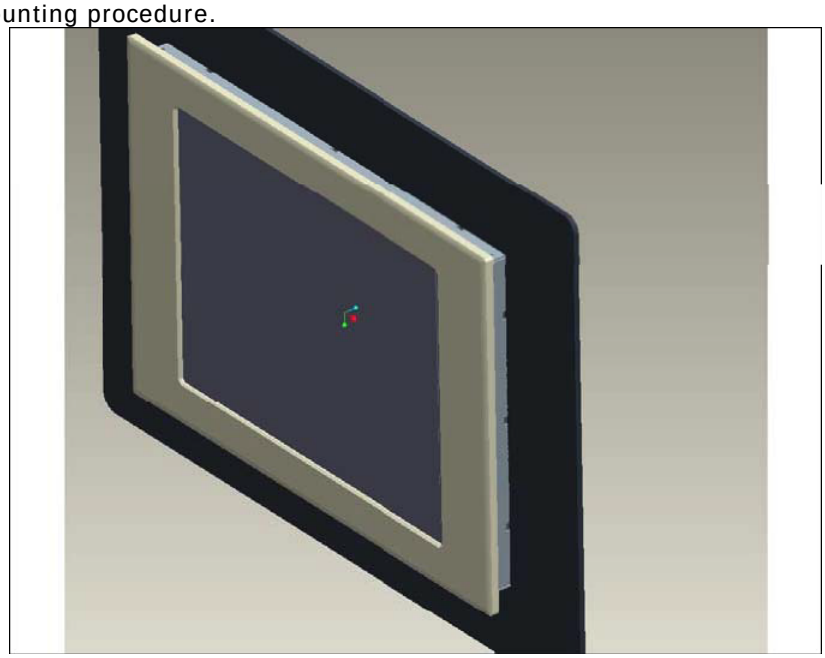


Figure 2.1: Positioning the Unit in the Cutout

From the rear of the unit, insert the mounting clips into the slots on the top, bottom, and sides of the unit. The appropriate number of screws and mounting clips are provided for each model.

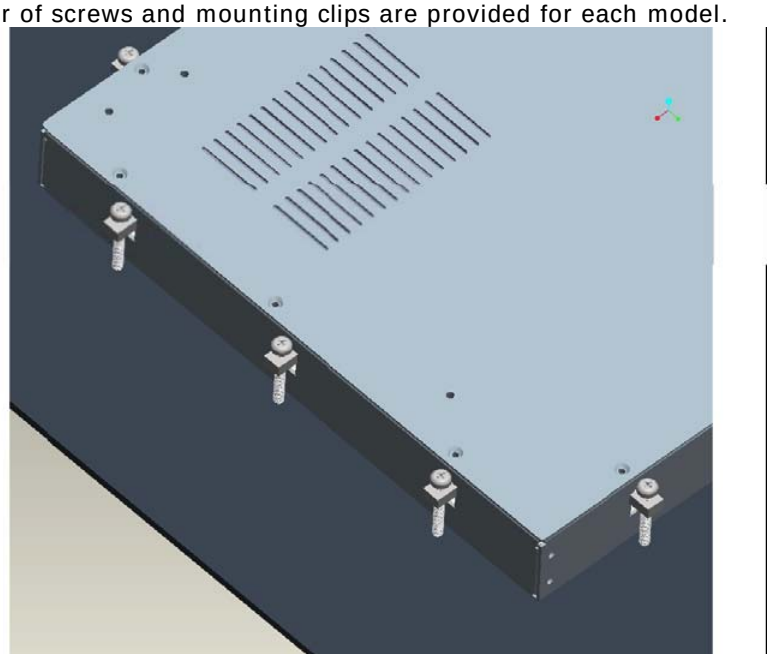


Figure 2.2: Inserting the Mounting Clips

Tighten the mounting clip screws in a crisscross pattern (top left, bottom right, bottom left, top right, etc.), each a little at a time until **five to seven inch-pounds** of torque is reached on each screw. **Do not completely tighten** any one screw at one time. The result could be an inadequate seal or deformation of the front bezel.

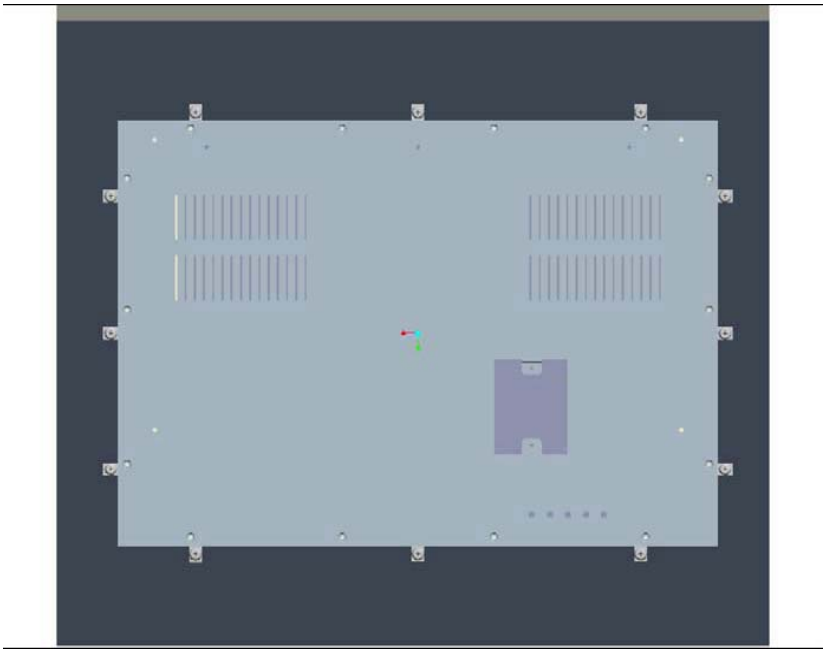


Figure 2.3: Tightening the Mounting Clip Screws

2 Touch screen configuration

If your VT240P/PS industrial LCD Monitor includes the optional resistive touch screen, then you need to install the touch screen driver from the Driver CD, and calibrate the screen.

Installing the Touch Screen Driver

Insert the Driver CD and open the Touch Driver folder located within the VT240P/PS_Touch-Drivers folder. Double Click on the application file “Elo_TETouch_5.4.1” to unzip driver.

Unzip the driver to your computer by click on “unzip”

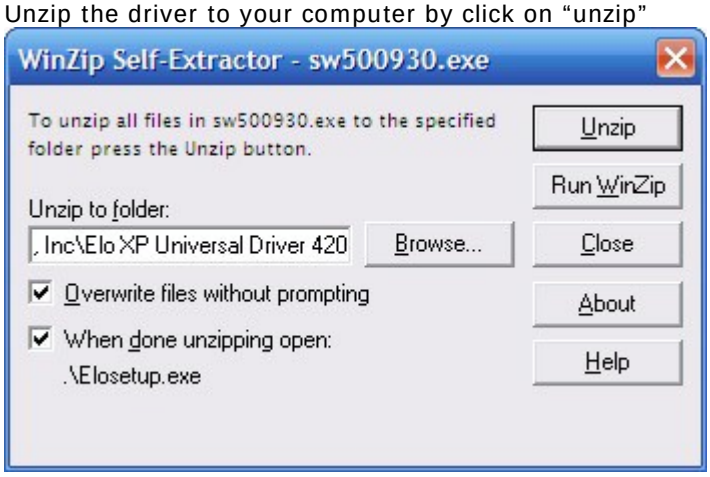


Figure 2.6: unzip the touch screen driver

After unzip the driver, driver installer will start automatically. Follow the instruction on the screen to complete the driver installation.

Calibrating the touch screen

Click on “**elo**” icon located in right-bottom corner. A pop up menu is shown as Figure 2.7. Then click on “Align”

Figure 2.6: Align the screen

A align screen is shown as Figure 2.7, click on the target to align the touch screen.

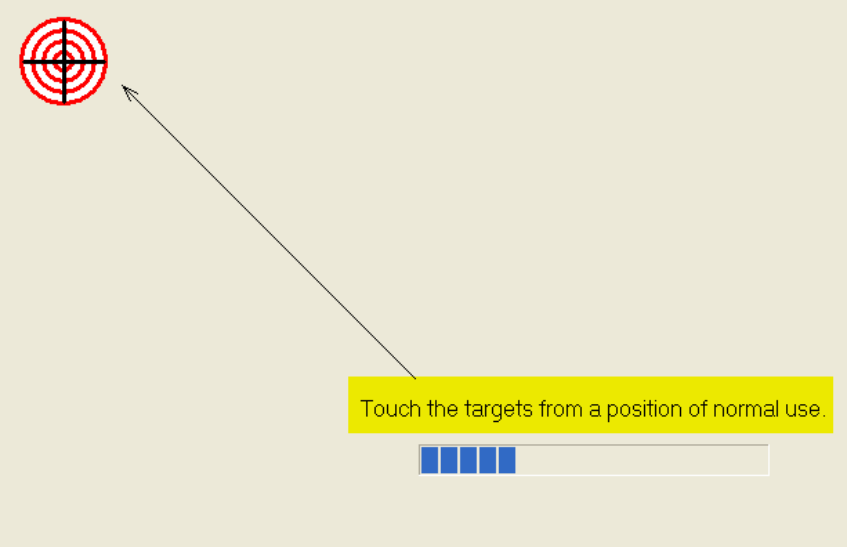


Figure 2.7: Touch the targets

Test the touch screen, and then confirm the calibration.

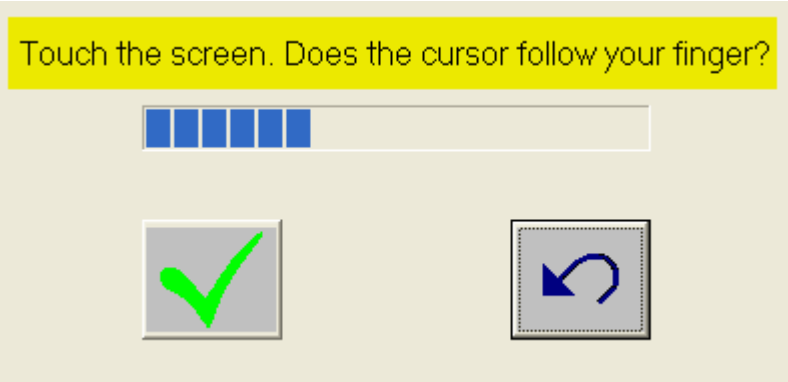


Figure 2.8: Test the touch screen and then confirm

3 Adjusting the display

You can adjust the display settings by accessing the on-screen display (OSD) control menu. To access the menu, use the control buttons located on the exterior of the display. The menu appears as a pop-up on the display, overlaying the video of the desktop or currently running application.

The location of the control buttons on the display exterior varies depending on your unit configuration. On most configurations, the control buttons are presented as a membrane keypad (Figure 2.9) on the display bezel.

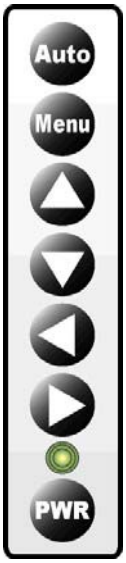


Figure 2.9: OSD Control Buttons Located on Display Bezel

On some unit configurations, instead of or in addition to the membrane keypad, the control buttons are presented as a cluster of pinholes (Figure 2.10) located on the *rear* of the display chassis.

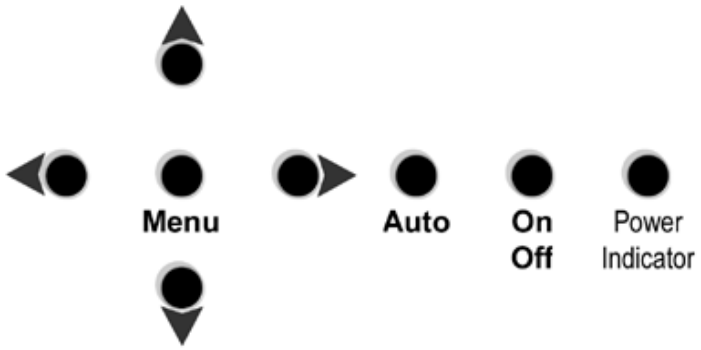


Figure 2.10: OSD Control Buttons Located on Rear of Display Chassis

	**Caution!** The actual control buttons are recessed inside the chassis. To press a button, *carefully* insert a stylus or small Philips-head screwdriver into the appropriate hole.

On unit configurations where both sets of control buttons are present, either set can be used to access the OSD control menu. Both sets access the same menu, and the individual buttons are functionally equivalent.

The **PWR** or **On/Off** button is used to turn the display on and off. The PC must be powered on for the display to be on, but the display can be turned off while the PC continues to operate. The power indicator next to the button is lit when the display is turned on.

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The **Auto** button is used to run an automatic calibration routine that adjusts the **h position**, **v position**, and **phase** settings to their optimum values. This routine runs without accessing the OSD control menu, but you can still use the control menu to adjust the settings to your preference.
The **Menu** button is used to open and close the OSD control menu (Figure 2.11).

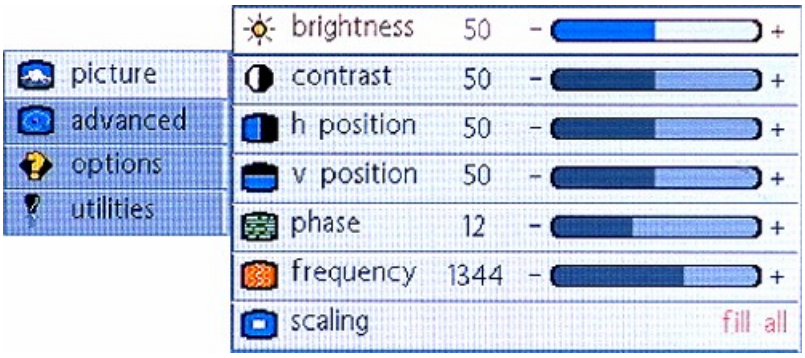

Figure 2.11: Opening the OSD Control Panel

The directional buttons (hereafter denoted as **Left**, **Right**, **Up**, and **Down**) are used to navigate through the OSD control menu once it has been opened. First, use the **Up** and **Down** buttons to select a specific menu, and then press **Right** to enter that menu. Once in the menu, use the **Up** and **Down** buttons again to select a specific setting.
The following sections describe the OSD control menu and settings in detail.

Picture Menu

The **picture** menu is used to adjust the position and quality of the screen image on the display.

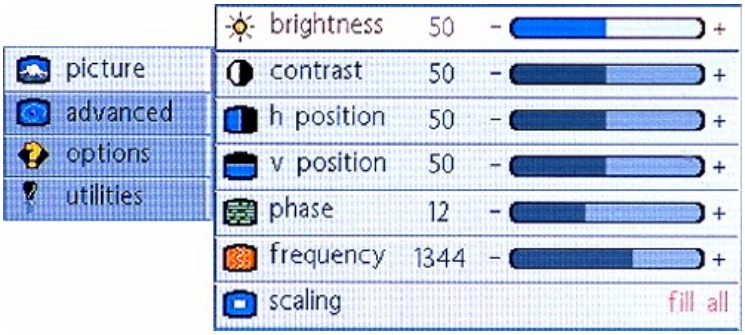

Figure 2.12: Picture Settings in the OSD Control Menu

To adjust a specific setting, use the **Left** and **Right** buttons.

brightness	Adjusts the image brightness.
contrast	Adjusts the difference between the light and dark areas.
h position	Moves the screen image left or right on the display.
v position	Moves the screen image up or down on the display.
phase	Adjusts the video distortion, which may appear as vertical noise on the screen.
frequency	Adjusts the analog signal frequency from 1294 to 1394.
scaling	Switches the scaling of the screen image from actual proportions (**fill aspect ratio**) to stretch-to-fit (**fill all**). With the latter setting, some distortion may occur.

Advanced Menu

The **advanced** menu is used to fine tune the sharpness and color of the screen image.

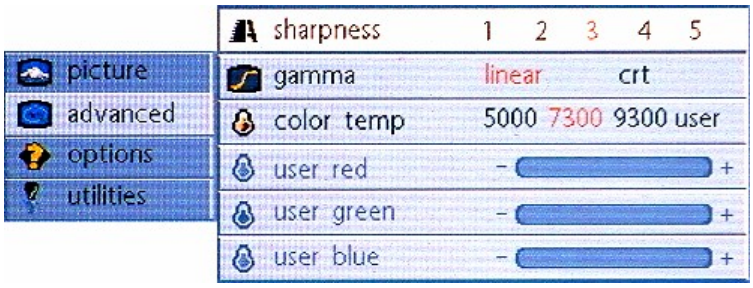

Figure 2.13: Advanced Settings in the OSD Control Menu

To adjust a specific setting, use the **Left** and **Right** buttons.

sharpness	Adjusts the sharpness of the screen image.
gamma	Switches the image gamma from actual values (**linear**) to a simulated CRT (**crt**).
color temp	Adjusts the color "temperature" of the screen image: - **5000**: Cool blue - **7300**: Neutral - **9300**: Warm yellow - **user**: Creates a custom profile using the **red**, **green** and **blue** scales.

Options Menu

The **options** menu is used to set preferences for the OSD control menu itself, such as its language and its position within the screen image.

Figure 2.14: Options Settings in the OSD Control Menu

To adjust a specific setting, use the **Left** and **Right** buttons.

osd h pos	Moves the OSD control menu itself left and right within the screen image.
osd v pos	Moves the OSD control menu itself up and down within the screen image.
language	Selects the language of the OSD control menu (English, Spanish or Japanese).
backlight	Adjusts the intensity of the display backlights.

Utilities Menu

The **utilities** menu is used to set additional preferences for the OSD control panel or to reset the entire display to its factory settings.

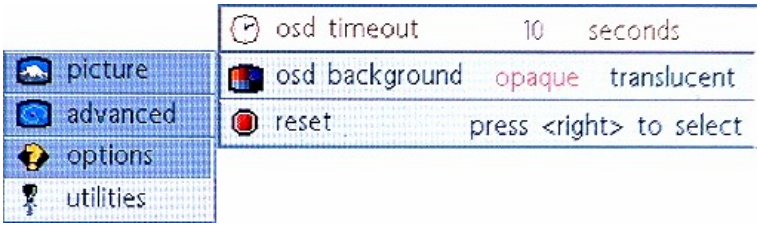

Figure 2.15: Utilities Settings in the OSD Control Menu

To adjust a specific setting, use the **Left** and **Right** buttons.

osd timeout	Determines how long the OSD control menu will remain on-screen before timing out.
osd background	Makes the OSD control menu **opaque** or **translucent** against the desktop.
reset	Resets the display to factory default settings.

Chapter 3. Maintenance and troubleshooting

1 Maintenance

Regular maintenance of the VT240P/PS industrial LCD can help prevent damage or downtime.

Warning! Do not operate or service the unit with its chassis open. There are hazardous voltages inside. Service should only be performed by qualified and authorized personnel. Make sure your industrial LCD is powered down and unplugged before removing the cover or working on internal components.

Replacing the Backlights

LCD backlights are rated at the number of hours of operation until they are at half of their original brightness. The VT240P/PS backlights are rated at 50,000 hours — that equates to six years of continuous service.

Signs that the backlights may need replacing include:

1) The top and/or the bottom of the screen is dim.
2) The image on the screen flickers.
3) The video appears to be blank in normal light, but can be very faintly seen in strong external light.

Please note that the backlights are **not** user serviceable. If the backlights need to be replaced, you must return the unit to Vartech Systems Inc. for service.

Troubleshooting

Symptom	Possible Causes	Actions
No LCD display image	- No power - No video signal	- Verify that the Power On LED is lit. - Check to see that the video source is on and operating, perhaps using another monitor.
Half of the image is dark	- Problem with the backlights	- Verify that the backlight cables are properly connected. - Check whether one of the backlights needs replacing.
LCD image is too bright or too white	- Adjustments - Unrecognizable sync patterns	- Reset the factory default settings. - Verify the supplied video format.
LCD image is not centered	- Adjustments - Unrecognized video format	- Adjust the positioning. - Verify the supplied video format.
Configuration changes not accepted by the monitor	- Adjustments	- When making adjustments, be sure to “back out” of the adjustment menus up to the main menu level.
Display jitters or flickers	- Adjustments	- Adjust Phase and Frequency for best image.

2 Returning a unit for warranty service

Vartech Systems Inc. hardware products purchased in the U.S. or Canada come with a 1-year limited warranty. The following sections describe the limited warranties and return policy for the U.S.

What is covered by this limited warranty?

This limited warranty covers defects in materials and workmanship in your — our end-user customer's — Vartech Systems Inc. hardware products.

How long does this limited warranty last?

This limited warranty lasts for the time period indicated on your packing slip or invoice. The limited warranty on all Vartech Systems Inc. products begins on the date of the packing slip or invoice. The warranty period is not extended if we repair or replace a warranted product or any parts. Vartech Systems Inc. may change the availability of limited warranties, at its discretion, but any changes will not be retroactive.

What do I do if I need warranty service?

Before the warranty expires, please contact Vartech Systems Inc. Customer Support at 800-223-8050. Please also have your Vartech Systems Inc.'s products serial number available.

What will Vartech Systems Inc. do?

During the two years of the 1-year limited warranty, we will repair any Vartech hardware products returned to us that prove to be defective in materials or workmanship. If we are not able to repair the product, we will replace it with a comparable product that is new or refurbished.

When you contact us, we will issue a Return Material Authorization Number for you to include with your return. You must return the products to us in their original or equivalent packaging, prepay shipping charges, and insure the shipment or accept the risk if the product is lost or damaged in shipment. We will return the repaired or replacement products to you. We will pay to ship the repaired or replaced products to you if you use an address in the United States (excluding Puerto Rico and U.S. possessions and territories). Otherwise, we will ship the product to you freight collect.

If we determine that the problem is not covered under this warranty, we will notify you and inform you of service alternatives that are available to you on a fee basis.

How will Vartech Systems Inc. fix my product?

How to Return: To return products, e-mail or call Vartech Systems Inc. customer service to receive a RMA(Return to Manufacturer Authorization) Number within the return policy period applicable to the product you want to return. You must obtain a Return to Manufacturer Authorization Number in order to return the product. You must ship the products to Vartech Systems Inc. within 10 business working days of the date that Vartech Systems Inc. issues the RMA Number. You must also return the products to Vartech Systems Inc. in their original packaging, in as-new condition along with any media, documentation, and all other items that were included in the original shipment, prepay shipping charges, and insure the shipment or accept the risk of loss or damage during shipment.

NOTE: Before you ship the product(s) to us, make sure to back up the data on the hard drive(s) and any other storage device(s) in the product(s). Remove any confidential, proprietary or personal information, removable media, such as floppy disks, CDs, or PC Cards. We are not responsible for any of your confidential, proprietary personal information; lost or corrupted data; or damaged or lost removable media